

## Forecasts and Postanalysis of Mountain Wave Temperature Fluctuations During SOLVE

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During the SAGE III Ozone Loss and Validation Experiment (SOLVE), a detailed mesoscale forecasting effort was undertaken within the SOLVE area of flight operations. The main goals were to forecast mesoscale temperature fluctuations (MTFs) and turbulence production in the stratosphere due to mountain waves. MTFs were used to locate regions where polar stratospheric clouds (PSCs) might form, while mountain wave-induced turbulence was used to plan safe flight routes with NASA's ER-2 research aircraft. We summarize the models and their forecast products, illustrate their influence on flight planning during SOLVE, and discuss some of the the major forecast events. These events are compared with in situ data acquired from aircraft and balloons. Finally, we discuss recent use of the NRL Mountain Wave Forecast Model (MWFM) to produce hemispheric maps of stratospheric mountain wave temperature variances based on "late look" DAO analyses. These products have been generated for every day of the 1999-2000 winter, for use in global chemical transport models to assess the role of mountain wave MTFs in polar stratospheric cloud and ozone evolution during SOLVE.